A comparison between observations of bird influxes at two ephemeral pans in Namibia and two estuaries of the Eastern Cape

C Engelbrecht

2018

ABSTRACT

The comparative historical method enables generating hypotheses that would often be left out by other means. Comparing different sites enabled a different understanding from traditional convictions. When having a close read of information the seemingly differences are not necessarily larger than the similarities.

Key words:
Comparative historical method, general laws, longue durée, ornithological research, Groot Dobe Pan, and Kleinemonde East Estuary.

The heading above gives the impression that one cannot compare apples with non-apples (or so the conventional wisdom goes). Nevertheless, the application of the comparative historical method (Dreyer 1974) for instance, is a well-used (and accepted) tool to generate or test hypotheses. For some, the logical structure of scientific explanation maintains that 'explanation is achieved, and only achieved, *by subsuming what is to be explained under a general law'* (Dray 1957: 1) as if explaining, confirming, testing, and predicting are compromised in the absence of such laws. For others, an algorithm for working out a comparative research strategy is: the analysis of the available sources for specific features (including difficulties) and finding solutions that build a research strategy (Volkova 2014: 303). This confirms the important future role that social sciences can play in ornithological research when considering factors of *longue durée.* It might even benefit citizen scientists in their growing role in.

At the end of December 1996 bird movements were surveyed and counted by three researchers at two ephemeral pans in Namibia (Simmons, Barnard and Jamieson 1998). Almost 20 years later, in April 2015, African Spoonbills (*Platalea alba*) were surveyed (and counted) at three estuaries in the Eastern Cape in order to ascertain their behaviour in relation to fluctuating water levels following 12 hours of high rainfall (Engelbrecht 2015: 1–9) in the immediate vicinity. Following from these results it seemed productive to compare seemingly non-comparable variables of two Namibian ephemeral pans with two Eastern Cape estuaries.

The differences between the two sets of sites under discussion are, obviously, glaring: climatologically Namibia and the Eastern Cape are dissimilar. As a result, the Klein Dobe Pan and the Groot Dobe Pan in Namibia have different water bodies compared to the Kleinemonde West Estuary (33°32'S, 27°02'W) and Kleinemonde East Estuary (33°32'S, 27°03'W) situated 15 km outside Port Alfred (33°35'54'S, 26°53'39'E) along the R72-road to East London of the Eastern Cape. Furthermore, the set of observations in the Namibian case covered some 23 species (including two African Spoonbills counted) whilst the Eastern Cape case study focused exclusively on African Spoonbills. The two Namibian pans are shallow (30–40 cm deep for the Klein Dobe Pan after the rains, and 1–3 cm for the Groot Dobe Pan after the same rains) located about 180 km away from the edge of the Okavango Swamps (but only 4,6 km apart from each other). On the other hand, the two estuaries are relatively shallow in comparison (in general estuarine terms), that is, between 1 and 2 m deep (Terörde 2008: 19) depending on the rainfall patterns, but deep in relation to the two Namibian pans. The estuaries are in close proximity to other water bodies (e.g. Riet River Estuary about 5 km and the Fish River Estuary about 13 km away). Furthermore, the observations in Namibia took place over a period of six days; at the estuaries by contrast, observations (approx. 30 minutes per observation) were done daily for a period of 29 days. It is also fair to say that estuaries dry out slower than ephemeral pans and presumably retain moist at higher levels for a longer period.

More importantly, the similarities between the two sets of observations and the circumstances thereof, are striking. Simmons (*et al.*) reported on normal rainfall conditions for their study in Namibia area and the water levels during the two months prior to the storms of 27 and 28 December 1998.The same can be said of the rainfall pattern and water levels at the Eastern Cape estuaries prior to heavy rainfall (161 mm) on 1st and 2nd April 2015. In both instances the water levels before the heavy rains were relatively low. In the case of the estuaries, water levels were between ~0,5 m and 1,3 m before April as the non-rainfall season approached. During February no Spoonbills were observed at either estuary (including the Riet River Estuary, situated some five km away). However, from mid-March Spoonbills arrived at the Kleinemonde West Estuary totalling 15 on average per day leading up to 1 April, but for the same period there were on average only four Spoonbills at the East estuary. As a result of the heavy rains on 1st and 2nd April, the water levels of both estuaries rose by ~1,0 – 1,2 m. Because of this high volume of additional water and tidal activity both estuaries breached their berms and opened into the Indian Ocean on 3 April and remained open until 1 May 2015. Within nine hours after the estuaries opened and scoured deep troughs as outflows into the sea, the *water levels dropped* to well below the pre-rain levels. Within a period of less than 12 hours Spoonbill *numbers increased* to 23 and 17 (total 40 on 3 April) at the West and East Estuaries respectively.

In contrast, the bird numbers at the Namibian pans *increased* with the *rising water levels* (Simmons *et al.* 1998: 146) whilst the numbers at the estuaries *increased* as the water levels *dropped*. For example, on 16 April, when the water levels were at its lowest (significantly lower than before the

rains) the highest number of Spoonbills were counted: 93 at the Kleinemonde East Estuary. In other words, this represented a steady increase over a 14-day period. Similarly, at the Namibian Pans there were also steady increases over a six day period to a high of 118 birds on the 6th day of observation at the Klein Dobe Pan, and a high of 326 on the 5th day of observation at the Groot Dobe Pan.

Simons (*et al*.) commented about birds' 'remarkable ability to find highly isolated and temporary wetlands in vast arid landscapes' (Simmons *et al*: 145). In the Eastern Cape, Spoonbills found suitable habitats between other estuaries in this non-arid region. There appears to be no reason why, following large scale rain fronts, this phenomenon could not also be applied to the estuaries under investigation. For instance, the areas of the two pans in Namibia of 30 and 50 ha respectively are similar to the surface areas of the two Eastern Cape estuaries which is approximately 58,3 ha for the Kleinemonde West Estuary, and 33 ha for the Kleinemonde East Estuary (Terörde 2008: 17–19). But it is, in the Eastern Cape case, questionable if Spoonbills used these two estuaries (during the period of observation, at least) as stopover locations following heavy rains. Firstly, if this was the case, it implies that the daily number of Spoonbills was replaced by new arrivals, or, that some left to migrate further whilst a next wave of arrivals make up the next number to be counted. If so then the new wave of arrivals came from unknown locations since they were neither at the Riet River nor at the Great Fish River estuarine environments. Secondly, continued observations and counts confirm that Spoonbill presence remained (~10–20) into at least the first week of August 2015.

References

Dray, W. 1957. *Laws and Explanation in History.* Greenwood Press, Publishers, Westport, Connecticut.

Dreyer, P.S. 1974. *Inleiding tot die Filosofie van die Geskiedenis.* Haum, Cape Town, Pretoria.

Engelbrecht, C. 2015. *'African Spoonbill (Platalea alba) Dispersal at East Kleinemonde Estuary. A Case Study.'* https://independent.academia.edu/christoengelbrecht/Papers, pp.1–9. [Accessed on 7 Aug. 2015.]

Simmons, R.E., P. Barnard and I.G. Jamieson. 1998. *'What Precipitates Influxes of Wetland Birds to Ephemeral Pans in Arid Landscapes? Observations from Namibia.'* Ostrich 70 (2): 145–148.

Terörde, A. I. 2008. '*Variation in the Use of Intermittently Open Estuaries by Birds: a Study of Four Estuaries in the Eastern Cape, South Africa.'* M.Sc. thesis (Zoology), University of Cape Town.

Volkova, T. 2014. *'Translation Model, Translation Analysis, Translation Strategy: An Integrated Methodology', in* Procedia – Social and Behavioural Sciences, 154: 301–304. (An Open access article under the CC BY-NC-ND license.) http://creativecommons.org/licenses/by-nc-nd/3.0/. [Accessed on 16 August 2015.]

Acknowledgement

I wish to express my sincere appreciation to Phelisa Hans at the Niven Library of The Percy FitzPatrick Institute of African Ornithology at the University of Cape Town, who kindly assisted in making some sources available.

Fig. 1. Excess water volume in progress of breaking open the Kleinemonde East Estuary on 1 and 2 April 2015.

Fig. 2. African Spoonbills at lower water levels of Kleinemonde East Estuary on 4 April 2015.